

Title (en)

METHODS OF FORMING SINTERED BORON CARBIDE

Title (de)

VERFAHREN ZUR FORMUNG VON GESINTERTEM BORONCARBID

Title (fr)

PROCÉDÉS DE PRODUCTION DE CARBURE DE BORE DE FRITTÉ

Publication

EP 2456733 A4 20130313 (EN)

Application

EP 10802902 A 20100722

Priority

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Abstract (en)

[origin: WO2011011606A2] A method of forming a sintered boron carbide body includes washing boron carbide powder with essentially pure water at an elevated temperature to generate low oxygen boron carbide powder, mixing a sintering aid and a pressing aid with the low oxygen boron carbide powder to form a green mixture, and shaping the green mixture into a green boron carbide body. The method can include mixing titanium carbide powder having an average particle diameter in a range of between about 5 nm and about 100 nm with the low oxygen boron carbide powder. The method can further include sintering the green boron carbide body, and hot isostatic pressing the sintered body, to a density greater than about 98.5% of the theoretical density (TD) of boron carbide. Alternatively, the method can include sintering the shaped boron carbide green body at a temperature greater than about 2,200 °C, to thereby form a eutectic liquid solid solution of B₄C/SiC, forming a sintered boron carbide body with a density greater than about 98% TD.

IPC 8 full level

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CPC (source: EP US)

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Citation (search report)

- [X] WO 2009020635 A2 20090212 - SAINT GOBAIN CERAMICS [US], et al
- [X] US 5505899 A 19960409 - SIGL LORENZ [AT], et al
- See references of WO 2011011606A2

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